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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,774	07/20/2004	Yasuhiro Sakurai	042593	4439

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EXAMINER	
GOODLEY, JAMES E	

ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/501,774	SAKURAI, YASUHIRO	
	Examiner	Art Unit	
	James E. Goodley	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-12,14 and 16-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-12,14 and 16-20* is/are rejected.

7)☒ Claim(s) *15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4, 6, 9, 11, 12, 14, 17, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by ***Pucci et al (of record)***.

Regarding **claim 1**, columns 2-4 and Figs. 1-3 of Pucci discloses a temperature compensated oscillator, comprising:

an oscillation circuit [12] whose oscillation frequency varies with a temperature change;

an output line [16] for outputting a signal based on an oscillation output of said oscillation circuit;

a temperature detection circuit [18] for detecting a temperature state near said oscillation circuit; and

a temperature compensation circuit [18] for keeping a frequency of the signal outputted to said output line substantially constant based on an output from said temperature detection circuit (see lines 10-19 of column 4),

wherein a selection circuit [interface 40, TC disable/enable 30 and timing generator 20] is provided which selects whether to enable or disable a temperature compensation function (see line 50 of column 2 – line 18 of column 3).

Regarding **claims 3, 4, 6 and 14**, Fig. 1 of Pucci discloses the temperature compensated oscillator of claim 1, wherein said oscillation circuit has an oscillation capacitor [varactor of oscillator 12 disclosed in lines 50-54 of column 3], and wherein said selection means has means [varactor] for allowing said temperature compensation circuit to vary a capacitance value (according to a control voltage 14) of said oscillation capacitor depending on a temperature detected by said temperature detection circuit when enabling the temperature compensation function of said temperature compensation circuit (depending upon detected temperature and voltage generated by block 18), and fixing the capacitance value of said oscillation capacitor to a predetermined capacitance value [previous compensation value prior to disabling block 30 – see lines 2-6 of column 3 – creating a known capacitance based on a predetermined compensation value – as voltage to capacitance characteristics of the varactor are known – line 55 of column 3 to line 9 of column 4] when disabling the temperature compensation function; and

said selection means has a switch [AND gate 52 of block 30 receiving enable/disable signal 32 in Fig. 2] to enable and disable said temperature compensation function.

Regarding **claims 9 and 11-12**, Fig. 1 of Pucci discloses the temperature compensated oscillation of claim 1, further comprising:

a compensation data storage circuit [18] which stores temperature compensation data of said temperature compensation circuit; and

a control information input terminal [42] provided on a package (see lines 6-9 of column 4) for inputting from outside, control information for controlling a selection state of said selection means.

Regarding **claims 17, 18 and 20**, Fig. 1 of Pucci discloses the temperature compensated oscillation of claim 3, further comprising a selection information storage circuit [18 and 20 - including a memory which stores temperature compensation data according to a multi-bit non-volatile memory address – lines 58-65 of column 2],

wherein said selection means selects either to enable or disable the temperature compensation function of said temperature compensation circuit, based on the signal from said selection information storage circuit (as compensation data from block 18 will influence frequency or the crystal oscillator and oscillator output is fed back to enable/disable circuit 30 to clock the enable/disable switching operation).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pucci in view of ***Gillig et al (of record)***.

Regarding **claim 2**, Pucci discloses the temperature compensated oscillator according to claim 1 except, "further comprising:

a variable frequency division circuit between said oscillation circuit and said output line,

wherein said selection means has means for allowing said temperature compensation circuit to vary a frequency division ratio of said variable frequency division circuit depending on a temperature detected by said temperature detection circuit when enabling the temperature compensation function of said temperature compensation circuit, and fixing the frequency division ratio of said variable frequency division circuit to a predetermined value when disabling the temperature compensation function."

However, Fig. 4 and the abstract of Gillig shows a temperature compensated oscillator which has a frequency varying with temperature comprising: a temperature detection circuit [72] driving a temperature compensation controller [70] to vary a frequency division ratio [÷J - 48] of a variable frequency division circuit depending on a temperature detected by said temperature detection circuit when enabling the

temperature compensation function of said temperature compensation circuit (when temperature varies enough to require altering the division ratio according to temperature compensation values stored in memory 74), and fixing the frequency division ratio of said variable frequency division circuit to a predetermined value when disabling the temperature compensation function (when temperature is very close to room conditions and hence needs no compensation).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Pucci by the device of Gillig by controlling the phase-locked loop dividing ratios via the programming interface of Cole for the purpose of being able to control both capacitance switching and divider control, therefore have greater temperature compensation ability.

Regarding **claim 10**, the device of Pucci in view of Gillig discloses the temperature compensated oscillator according to claim 2 (with reference to Pucci), further comprising:

a selection information storage circuit [18] which stores control information for controlling a selection state of said selection means (as compensation data from block 18 will influence frequency or the crystal oscillator and oscillator output is fed back to enable/disable circuit 30 to clock the enable/disable switching operation); and

a compensation data storage circuit [18] which stores temperature compensation data of said temperature compensation circuit,

wherein said selection information storage circuit and said compensation data storage circuit form an integrated circuit (see lines 6-9 of column 4).

Claims 4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pucci in view of ***Wojewoda et al (of record)***.

Regarding **claim 4 and 6-7**, Fig. 1 of Pucci shows the temperature compensated oscillator of claim 3 except, "wherein said oscillation capacitor includes a variable capacitor which varies in capacitive value in accordance with a voltage applied thereto, and said temperature compensation circuit has means for changing the voltage applied to the variable capacitor to change the capacitance value of said oscillation capacitor by separating the variable capacitor from the oscillator when fixing the capacitance value to the predetermined value".

However, lines 63-67 of column 3, lines 1-25 of column 4 and Fig. 2 of Wojewoda show temperature detection [34] and compensation circuits [30] which apply a correction voltage to varactors 68 to vary capacitance of the oscillator circuit and to switch in an out said varactors via an external signal [64].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Pucci by the device of Wojewoda by including a voltage variable capacitance instead of switching in and out an array of discrete capacitors for the purpose of obtaining a more finely tuned temperature compensation circuit.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pucci in view of ***Cole et al (of record)***.

Regarding **claim 5**, Pucci suggests but does not specifically disclose (as per lines 60-62 of column 3 – a plurality of parallel varactors) the device of claim 3, "where said oscillation capacitor includes a plurality of fixed capacitors and said temperature compensation circuit has means for changing connection states of the plurality of fixed capacitors to change the capacitance value of said oscillation capacitor."

However, Figs. 1 and 7 of Cole disclose the art-recognized equivalency of using fixed capacitors [72] controlled by switching transistors [74] instead of varactors.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Pucci by the device of Cole by utilizing a plurality of fixed capacitors instead of varactors for the purpose of easier controllability and programming of the capacitive temperature compensation function.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pucci in view of ***Shibuya et al (US 6,292,066)***.

Regarding claim 16, Pucci suggests but does not specifically disclose the device of claim 3 wherein, "said means for fixing said oscillation capacitor to the predetermined capacitance value is a constant voltage generation circuit."

However, Fig. 1 and line 29 of column 13 – line 52 of column 14 of Shibuya discloses a temperature compensated crystal oscillator very similar to that of Pucci in which a constant voltage generation circuit [12] is utilized in the temperature compensation based on data from the ROM/RAM circuit [16].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Pucci by including a constant voltage generation circuit disclosed by Shibuya in the temperature compensation block 18 of Pucci for the purpose of allowing plural temperature compensation parameters to be adjusted (see lines 6-15 of column 15 in Shibuya).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over ***Pucci***

Regarding **claim 19**, the device of Pucci shows the temperature compensated oscillator circuit of claim 17 and suggests but does not specifically disclose, "wherein said selection information storage circuit is composed of a conductive pattern and enables the temperature compensation function of said temperature compensation circuit caused by the conductive pattern being switched off.

However, it is inherent that the memory circuit of Oka has an array of storage cells of a predetermined conductive pattern. It is also well-known to include one or more fuses or like devices which can cut-out based on a threshold voltage or other environmental condition (such as temperature) and will therefore alter which memory address is being accessed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Pucci by including a predetermined conductive pattern which stores information for controlling a selection state when said conductive pattern is switched off for the purpose of accessing desired stored

information when a fault condition, such as a detected voltage above some threshold, has occurred.

Allowable Subject Matter

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding **claim 15**, none of the references of record disclose or fairly suggest the device of claim 14, "wherein said switch to disable said temperature compensation function is means for fixing the capacitance value of said oscillation capacitor to a predetermined capacitance value; and

a signal from said means for fixing said oscillation capacitor to the predetermined capacitance value is inhibited from inputting when said switch to enable said temperature compensation function is on, and a signal from said temperature compensation circuit to said oscillation circuit is inhibited from inputting when said switch to disable said temperature compensation function is on."

Response to Arguments

Applicant's arguments filed 7/14/2006 have been fully considered and are persuasive.

In view of the perfected foreign priority, the Oka rejections under 35 USC 102 and 35 USC 103 have been removed. Thus, new references and interpretation are relied upon for disclosure of the subject matter previously disclosed by Oka.

Currently, the Cole reference is not relied upon as a primary reference, as the Pucci reference allows for easier interpretation for the disclosure of the claimed subject matter.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James E. Goodley whose telephone number is 571-272-8598. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JG

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